Universiti Teknologi MARA

Color-Based Butterfly Species Identification Using Support Vector Machine

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STUDENT DECLARATION

I certify that this thesis and the project to which it refers is the product of my own work and that any idea or quotation from the work of other people, published or otherwise are fully acknowledged in accordance with the standard referring practices of the discipline.

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ABSTRACT

Previously, few of expert found that the butterfly identification was complicated, more time consuming and difficult. Butterfly species are difficult to identify because they have different in size, color, and shape. Butterfly Species Identification is an identification of butterfly species that involves a butterfly image. The purpose of this project is to identify butterfly species. This project proposed an appropriate method for the butterfly species identification which is to identify the species of the butterfly images. The scope of this project covers of two species of butterfly which are Vanessa atalanta and Aglais io. The data has been collected from Datasets for Computer Vision Research website. For project methodologies, there are three phases such as data collection, processing and post-processing. For data collection, two species are involved Vanessa atalanta and Aglais io that have 100 data image for each species. In processing phase, there have feature extraction and butterfly species identification. For feature extraction, color histogram technique was used to extract feature from butterfly image. The features include mean, variance, standard deviation and skewness. These color features are calculated from the color component of red, green and blue. This feature classify using Support Vector Machine (SVM) was applied as a technique for identify two group of butterfly species. Testing and evaluation are includes in post-processing phase. The results proved that it significantly works on two butterfly species of Vanessa atalanta and Aglais io to classify that butterfly images. Therefore, this prototype will be significantly benefits to the users.

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